INT. ASS.
19/MHS01/090.

$= 2\int \frac{x}{(4x^2-1)^{1/2}} \cdot \frac{(4x^2-1)^{1/2}}{4x} du$

$= \frac{2}{4}\int du$

$= \frac{1}{2}\int du$

$= \frac{1}{2}u + c$

$\int \frac{2x}{\sqrt{4x^2-1}} dx = \frac{1}{2}(4x^2-1)^{1/2} + c$

2. $\int \frac{\sin^{-1}x}{\sqrt{1-x^2}} dx$

$= \int \sin^{-1}x \cdot (1-x^2)^{-1/2} dx$

Let $u = \sin^{-1}x$

$du = (1-x^2)^{-1/2} dx$

$\int \sin^{-1}x \cdot (1-x^2)^{-1/2} dx = \int u\,du$

$= \frac{u^2}{2} + c$

$\int \sin^{-1}x \cdot (1-x^2)^{-1/2} dx = \frac{(\sin^{-1}x)^2}{2} + c$

3 $\int (\tan x)^6 \sec^2 x\, dx$

$\int (\tan x)^6 \sec^2 x\, dx = \int u^6 du$

$= \frac{u^7}{7} + c$

$\int (\tan x)^6 \sec^2 dx = \frac{(\tan x)^7}{7} + c$

$+C = \frac{-1}{3(3x-5)^4} + C$

$\sqrt{2x+1})dx$

$\sqrt{2x+1}$

$2x+1$

$= 2dx$

$= u\,du$

$\int$

$\int$

$u^2-1)$

$\int \frac{}{\sqrt{4x^2-1}}\,dx$

Let $u = \sqrt{4x^2-1} = (4x^2-1)^{1/2}$

$\frac{du}{dx} = \frac{1}{2}(4x^2-1)^{-1/2} \cdot 8x$

$\frac{du}{dx} = (4x^2-1)^{-1/2} \cdot 4x$

$\frac{du}{dx} = 4x(4x^2-1)^{-1/2}$

$dx = \frac{du}{4x(4x^2-1)^{-1/2}}$

$dx = \frac{(4x^2-1)^{1/2}\,du}{4x}$